Universität Münster

Cells in Motion Interfaculty Centre

› Cells in Motion Newsletter 2025

Dear colleagues,

As the year draws to a close, we are pleased to share highlights from our cell dynamics and imaging research community and to update you on our network's activities. Merry Christmas and all the very best for 2026!

The Cells in Motion (CiM) Executive Board and Science Management & Communication Team

A firework display of immune cells lights up our Christmas bauble this year.
Find out more here!

Boosters for collaborative research & interdisciplinary career paths

Two Collaborative Research Centres (CRC) in the field of cell dynamics and imaging were approved for funding in November by the German Research Foundation! CRC 1348 'Dynamic Cellular Interfaces' (spokesperson: Stefan Luschnig), a driving force in our field for the past eight years, and the newly established CRC 1748 'Principles of Reproduction' (spokespersons: Frank Tüttelmann, Nina Neuhaus, Timo Strünker) will each receive 12 million euros. Congratulations!

CRC 1748 focuses on the molecular pathomechanisms underlying male infertility, aiming to deepen our understanding of the fundamental biological principles of human reproduction and ultimately advance reproductive medicine. CRC 1348 will continue to investigate how cells interact at interfaces – exchanging information, substances and mechanical forces. These dynamic cellular interfaces regulate signalling processes that are essential for tissue architecture and normal organ function.

Excellence through collaboration: principal investigators and junior researchers of CRC 1348 'Dynamic Cellular Interfaces' (left), and the CRC 1748 'Principles of Reproduction' spokespersons (right).
Pictures: Michael Kuhlmann, Florian Kochinke

Research on inflammation is also thriving in our community, driven by the imaging-focused CRC 1450 'inSight', the CRC-TRR 332 'Neutrophils' and the CRU 342 'Organ Dysfunction During Systemic Inflammation'. With six years of funding secured, CRU 342 will highlight its achievements and outline new initiatives at next year's Inflammation & Imaging Symposium (7–9 September 2026) – so, save the date! The Translational Centre for Inflammation (TRACI), which serves as a bridge between research and clinical practice, has recently recruited biologist Selina Jorch as Junior Professor of Pathophysiology and Plasticity of Inflammation, Infection and Resolution. We are delighted to welcome her to the Multiscale Imaging Centre (MIC). Join us for a TRACI special edition of our Inflammation & Imaging Lecture on 26 January 2026, where Selina Jorch and Philipp Backhaus – who was appointed TRACI junior professor last year – will present their research.

In 2025, Selina Jorch and her research group moved into the MIC. Welcome!

The outstanding research environment in inflammation and imaging has fostered two career programmes, both recently approved for a second funding period. The Clinician Scientist Programme *CareerS* at our Faculty of Medicine (spokesperson: Michael Schäfers) will receive 1.3 million euros from the German Research Foundation (DFG). The programme supports medical professionals who integrate patient care with research in their careers. While the DFG funding primarily supports research on organ-specific immune responses, the *CareerS* team – together with the Faculty of Medicine and local research networks – has broadened the programme to include candidates pursuing diverse research topics across all clinical disciplines. The team has established new career modules to support clinician scientists both during the challenging phase of obtaining scientific qualifications alongside specialist medical training, and during their transition to leading independent research groups. Since its launch in 2023, the programme has funded 44 candidates from 31 clinics and institutes. The Faculty of Medicine, which is already providing significant co-funding, will continue to run *CareerS* beyond the DFG funding period.

Our university's Medical Scientist Programme *InFlame* (spokesperson: Petra Dersch) was recently awarded 1.1 million euros by the Else Kröner-Fresenius Foundation for a second funding period. *InFlame* supports postdocs from the natural sciences in developing careers in the interdisciplinary field of inflammation research. To date, 18 postdocs in biology, chemistry and computer science have joined the programme. *CareerS* and *InFlame* share curricula and networking forums, fostering collaborations between natural scientists and clinicians and creating synergies between research and clinical practice.

Left: Delighted at the news of continued funding for the Clinician Scientist Programme CareerS! Spokesperson Michael Schäfers, Coordinator Silke Jamitzky, the dean of the Faculty of Medicine, Frank Ulrich Müller, and the medical director of the University Hospital Münster, Alex W. Friedrich. Right: Petra Dersch, spokesperson of the Medical Scientist Programme InFlame, highlighting the important role that natural scientists play in medical research at the Medical & Clinician Scientist Forum 2025.
Pictures: Michael Ibrahim, Erk Wibberg

A wide range of support for junior scientists

Throughout the year, we have provided groups of junior scientists with opportunities to exchange ideas with experienced researchers and learn from their insights on building an academic career. As part of the 5th Inflammation & Imaging Symposium, junior clinician scientists gained insights into the careers of four international colleagues, learning how chance events shaped pioneering decisions and receiving motivating advice on sustaining passion for both science and clinical practice. Another 'meet-the-speaker' event aimed at female doctoral and postdoctoral researchers was organised by the Integrated Research Training Groups (IRTG) of CRC 1348 'Dynamic Cellular Interfaces' and CRC 1450 'inSight'. Featuring an invited junior group leader, the session provided a candid space to share experiences and discuss strategies for the transition to scientific independence.

Junior and senior clinician scientists alike enjoyed talking about their passion for research and patient care, exchanging strategies for navigating the challenges of a dual career path.
Picture: Clinician Scientist CareerS Münster

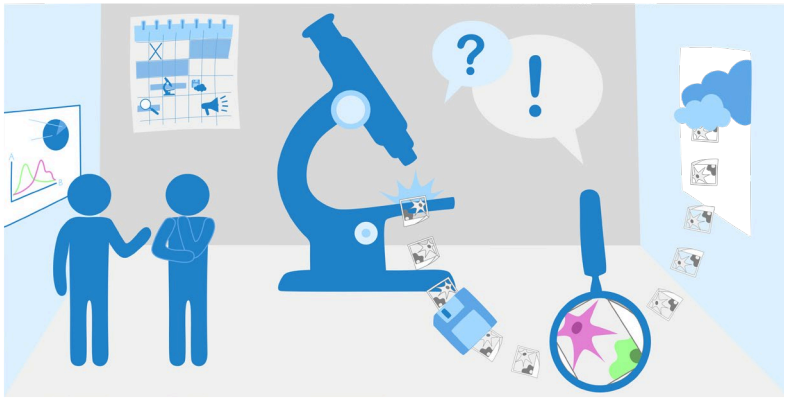
In addition to hosting their annual scientific symposium, the PhD students in our CiM-IMPRS Graduate Program organised a full Career Day, featuring role model talks about careers in academia and industry, valuable advice on job applications, and lively exchanges with alumni. This year's retreat took place at the Max Planck Society's Harnack-Haus in Berlin, where students shared their lastest results and discussed cutting-edge methods employed in their projects. On another occasion, they visited Miltenyi Biotec to learn about career paths and research opportunities in the biotechnology industry.

A snapshot from this year's CiM-IMPRS retreat: PhD students presenting their various research methods.
Picture: Martin Wild

In 2025, our Research and Careers Committee awarded funding to three new interdisciplinary CiM Pilot Projects. These projects involve doctoral and postdoctoral researchers from the Faculty of Medicine and the Max Planck Institute investigating single-cell lipidomics of *Yersinia*-infected neutrophils, characterising pathogen-host interactions in Pyelonephritis using a novel human kidney organoid infection model, and exploring the biomechanical niche of ageing nephrons. Results from these projects will be shared at next year's CiM Brown-Bag Lunches and Inflammation & Imaging Lectures. Additionally, 14 CiM Travel Awards were awarded to early-career researchers to attend scientific conferences in Germany, Europe and overseas. In total, 22 junior scientists from 18 CiM labs benefited from our career support programmes.

In collaboration with our university's Centre for Emerging Researchers (CERes), CiM developed and ran a pilot workshop to help junior researchers take their first steps in public engagement. PhD students and postdocs learnt about the principles, quality standards, and diverse formats of science communication. With one-on-one coaching from experienced communicators, they then created individual pieces about their research. Using different media and narrative styles, four of our junior scientists reported on different aspects of their research using the fruit fly *Drosophila* as a model system.

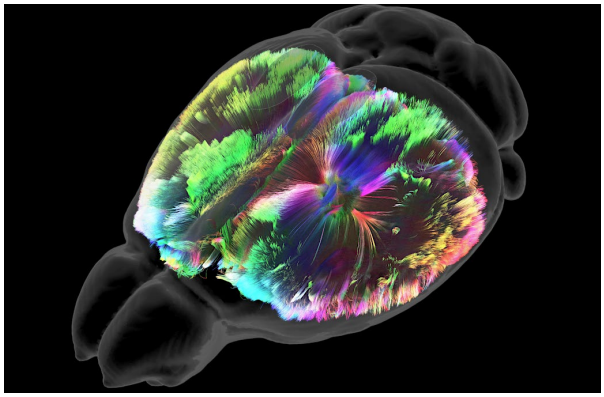
New imaging tools & well-established options for shared use and training



Tools, tips and training for microscopy: Our network offers comprehensive support in cutting-edge microscopy.
Image: Marie Baldenius

45,000 hours of booked microscopes, 50 microscopy training sessions, and 25 collaborative image analysis projects – the microscopy branch of the Münster Imaging Network supported numerous scientists at our university this year. Together with CRC 1348 'Dynamic Cellular Interfaces' and CRC 1450 'inSight', the microscopy team integrated new imaging and analysis tools into existing microscopes, including single-molecule dynamics tracking (Dynamics Profiler) and new features in the LSM980 software. Alongside the well-established microscopy and image analysis courses, new workshops on research data management (RDM) were introduced. In collaboration with the Centre for Information Technology (CIT), a nation-wide cloud-based RDM infrastructure ('OMERO sandbox') and an image analysis platform available on JupyterHub.nrw now provide the latest AI and deep learning tools for image analysis to universities throughout North-Rhine Westphalia. With the mission to create sustainable solutions for managing, sharing and reusing bioimaging data, the microscopy branch of the Münster Imaging Network is also part of the NFDI4BIOIMAGE consortium (German National Research Data Infrastructure, NFDI). The team's role in this nation-wide initiative is strengthened by biologist Marie Baldenius, now the main contact for workshops, seminars and community support, thanks to an NFDI-funded position.

The Münster Imaging Network provides extensive expertise and experience in team-based, interdisciplinary research, including preclinical imaging. Previously operating as part of an IZKF core unit, the Preclinical Imaging eXperts (PIX) will fully integrate into Münster Imaging Network's preclinical imaging branch from 2026. The infrastructure covers state-of-the art imaging modalities, ranging from magnetic resonance imaging (MRI) and optical imaging to positron emission tomography (PET) and single photon emission tomography (SPECT), and includes hybrid devices (PET/MRI, SPECT/CT). In 2025, the equipment was expanded to include a focused ultrasound system – a stereotactically guided therapeutic method that can, for example, open the blood-brain barrier or activate sonosensitizers in a targeted manner. To learn more or connect with the team, please don't hesitate to get in touch!



An example of interdisciplinary collaboration in the field of preclinical imaging: This MRI-based reconstruction of nerve fibres in a mouse brain is from a collaboration between preclinical imaging experts and the Department of Neurology at the University Hospital Münster. It helped explain how physical activity and diet improve recovery after a stroke. Diffusion-weighted MRI was used as a non-invasive means of visualising the macroscopic architecture of nerve fibres in mice, complementing traditional tissue section immunofluorescence staining approaches. The diagnostic potential of this method in patients is currently under evaluation.
Image: Bastian Maus

Open days & public engagement at the Multiscale Imaging Centre

School students pipetting samples during a 'Science Day' (left) and a lab visit during the 'Lange Nacht der Universitätsmedizin' (right).
Pictures: Michael Ibrahim, Michael Kuhlmann

This year, our community was involved in several major events aimed at opening our university to the public. Numerous research groups across campus contributed to the 'Lange Nacht der Universitätsmedizin', which included lab visits at the Multiscale Imaging Centre (MIC) – CiM's research building. This open house featured captivating discussions on topics such as the significance of basic research and how scientific findings are translated into clinical practice. In addition, we launched our '*in*VISIBLE' exhibition at the MIC. University staff, students, and visitors from outside the university took part in guided tours and seized the opportunity to gain firsthand insight into the research conducted by the groups working in the building. Using visually appealing scientific images to spark curiosity and then delve deeper into the underlying research, once again proved to be a successful formula. For the young scientists involved, interacting with visitors was a valuable opportunity to reflect on their work from a fresh perspective and receive motivating feedback. Visitors also enjoyed the unique artwork in our foyer, which offers an intuitive and sensory introduction to how biomedical images are created. Many attendees engaged deeply with the exhibits, with some even returning multiple times.

Visitors exploring the inVISIBLE exhibition at the Multiscale Imaging Centre.
Picture: Erk Wibberg

We are delighted that the exhibition is being used by our community to introduce visitors to examples from our research field and that it continues to enrich diverse events hosted at the MIC –from scientific conferences to school visits. For example, this year MIC provided an inspiring setting for school students to explore the world of immunological research. Jointly organised by CRC-TRR 332 'Neutrophils' and 'MExLab', the university's institution responsible for school outreach, the programme invited school students to investigate immune cells in different tissues using flow cytometry and fluorescence-based detection. In doing so, they gained first-hand insights into the complex processes that govern immune response regulation. The well-established lecture series for teachers and school students offered by CRC 1348 'Dynamic Cellular Interfaces' is likewise held at the MIC.